UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,633	02/19/2004	Johan Nilsson	0119-172	1888

42015 7590 12/12/2007
POTOMAC PATENT GROUP PLLC
P. O. BOX 270
FREDERICKSBURG, VA 22404

EXAMINER	
TAYLOR, BARRY W	
ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
12/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/780,633	NILSSON, JOHAN	
	Examiner	Art Unit	
	Barry W. Taylor	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-25,27-43 and 45-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-8,10-16,18,19,22-25,27-29,31-37,39,40,43 and 45-47* is/are rejected.

7)☒ Claim(s) *9,17,20,21,30,38,41 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 June 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 19, 40 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awad et al (2004/0022177 hereinafter Awad) in view of May et al (2006/0036434 hereinafter May).

Regarding claim 40. Awad teaches an apparatus (UE) that decodes a High Speed Shared Control Channel Part 1 (HS- SCCH Part 1) message in a High Speed Downlink Packet Access (HSDPA) system that includes a full set of possible codewords (title, abstract, paragraphs 009-0018, 0025 – 0026, 0029, 0030 – 0049, 0068 - 0076), the apparatus comprising:

logic that receives the HS-SCCH Part 1 message (see paragraphs 009-0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076 where a full set or reduced set of modulation schemes are used and a modulation scheme (i.e. 16-QAM, 64-QAM or QPSK) is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to the Base Station employ higher levels of Modulation-and-coding scheme);

logic that generates a set of correlation values by correlating each of a reduced set of possible codewords against the received HS-SCCH Part 1 message (see paragraphs 009-0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076 where a full set or reduced set of modulation schemes are used and a modulation scheme (i.e. 16-QAM, 64-QAM or QPSK) is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to the Base Station employ higher levels of Modulation-and-coding scheme); and

logic that selects as a decoded value that one of the reduced set of possible codewords that is associated with a highest one of the correlation values, wherein the reduced set of possible codewords is generated from the full set of possible codewords (see paragraphs 009-0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076 where a full set or reduced set of modulation schemes are used and a modulation scheme (i.e. 16-QAM, 64-QAM or QPSK) is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to the Base Station employ higher levels of Modulation-and-coding scheme).

According to Applicants, Awad does not teach correlating to a reduced set of possible codewords (see paper dated 11/15/07, page 12 lines 5-7).

May also teaches in the CDMA environment wherein received signal is compared to threshold to determine modulation rate to be applied (paragraphs 0005, 0009, 0025, 0036 - 0037) to allow for dynamic adjustments thus optimizing system performance.

May et al even discloses a subset (i.e. reduced set) may be used (paragraphs 0038, 0040, claims 6 and 8 on page 5) which depends upon the degree of accuracy desired.

It would have been obvious for any one of ordinary skill in the art at the time of invention was made to modify the invention as taught by Awad to use subsets as taught by May in order to more accurately determine the modulation scheme to apply at the receiver as disclosed by May.

Regarding claim 19. Method claim 19 is rejected for the same reasons as apparatus claim 40 listed above since the recited apparatus would perform the claimed method.

Regarding claim 47. Program claim 47 is rejected for the same reasons as apparatus claim 40 and method claim 19 since the recited apparatus and method would perform the claimed program steps.

2. Claims 1-4, 6-8, 10-16, 18, 22-25, 27-29, 31-37, 39, and 43 and 45--46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter AAPA, see "BACKGROUND", paragraphs 0002 – 0054 and figures 1-4) in view of Strutt (7,072,618) and Awad et al (2004/0022177 hereinafter Awad) further in view of May et al (2006/0036434 hereinafter May).

Regarding claim 1. AAPA discloses a method of determining whether to abort reception of a multi-part message in a code division multiple access communication system, comprising:

receiving a part of the multi-part message (paragraphs 0006, 0007, 0010, 0017, 0020 – 0027, 0029, 0030 – 0041 and prior art figures 1-4);

generating a correlation value by correlating the received part of the multi- part message with a known sequence (paragraphs 0006, 0007, 0017, 0032 – 0038, see "XOR" commonly used to correlate a received signal in CDMA – paragraphs 0039 – 0040 and **especially** block 209 in prior art figure 2 wherein paragraph 0043 clearly admits decision block 209 in already known to correlate the received HS – SCCH Part 1 information (i.e. multi-part message));

comparing the correlation value with a threshold level; and

aborting reception of the multi-part message if the correlation value is less than a threshold level (see paragraphs 0032 – 0033, 0042 wherein if correlation is for that particular MS then process will continue else there is no point in taking further steps to receive this HS-SCCH and process is **aborted**).

It appears from comparing Prior Art figure 2 and figure 5 that AAPA does not use threshold to compare correlation value blocks (see the only difference between figures 2 and 5 is using threshold blocks 513, 525 and 531 in figure 5).

Strutt also teaches in the Code Division Multiple Access environment (col. 1 line 40 – col. 3 line 17) and offers an adaptive threshold selection for detection of a signal in the presence of noise (title, abstract) and reduces the number of false alarms by correlating the received signal and compares to threshold to determine whether the received signal includes a valid data signal or just noise (col. 3 lines 32-55) wherein the comparison circuit outputs a detection signal indicating detection of data signal in the received signal when the correlated value is at least equal to the threshold and outputs a non-detection signal indicating non-detection of the data signal when the level is less

than the threshold value. Strutt inventions adaptively detects noise and adjusts the threshold accordingly (col. 5 lines 4-67) and is well suited for CDMA systems wherein interference form other MS using different spreading codes can be characterized by its high correlation noise and can reduce overall complexity of the system by implementing the circuit (120 in figure 4) in a single application specific integrated circuit (col. 6 lines 22-56).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA (UE equipment) to include the ASIC circuit (i.e. 120 figure 4) as taught by Strutt so that the UE can determine if the signal is directed to it or the signal is just noise and not process the noise signal while reducing the overall size of the UE as taught by Strutt (col. 6 lines 29-33).

According to Applicants amended claim language and argument on page 17, paper dated 6/4/07, prior art does not teach dynamically adjusting the threshold level based on a communication traffic behavior.

Awad et al teaches using full set or reduced set of modulation schemes (see title, abstract, paragraph 0009 – 0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076) wherein 16-QAM, 64-QAM or QPSK modulation scheme is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to BS can employ higher levels of Modulation-and-coding scheme (paragraphs 0012 and 0018).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the invention as taught by AAPA in view of Strutt to consider channel conditions as taught by Awad in order to dynamically select modulation and coding schemes thereby providing the most efficient level of service to each mobile station.

According to Applicants, Awad does not teach correlating to a reduced set of possible codewords (see paper dated 11/15/07, page 12 lines 5-7).

May also teaches in the CDMA environment wherein received signal is compared to threshold to determine modulation rate to be applied (paragraphs 0005, 0009, 0025, 0036 - 0037) to allow for dynamic adjustments thus optimizing system performance. May et al even discloses a subset (i.e. reduced set) may be used (paragraphs 0038, 0040, claims 6 and 8 on page 5) which depends upon the degree of accuracy desired.

It would have been obvious for any one of ordinary skill in the art at the time of invention was made to modify the invention as taught by AAPA in view of Strutt and Awad to use subsets as taught by May in order to more accurately determine the modulation scheme to apply at the receiver as disclosed by May.

Regarding claim 22. AAPA discloses an apparatus that determines whether to abort reception of a multi-part message in a code division multiple access communication system, the apparatus comprising:

logic that receives a part of the multi-part message (paragraphs 0006, 0007, 0010, 0017, 0020 – 0027, 0029, 0030 – 0041 and prior art figures 1-4);

logic that generates a correlation value by correlating the received part of the multi-part message with a known sequence (paragraphs 0006, 0007, 0017, 0032 – 0038, see "XOR" commonly used to correlate a received signal in CDMA – paragraphs 0039 – 0040 and **especially** block 209 in prior art figure 2 wherein paragraph 0043 clearly admits decision block 209 in already known to correlate the received HS – SCCH Part 1 information (i.e. multi-part message));

logic that compares the correlation value with a threshold level; and

logic that aborts reception of the multi-part message if the correlation value is less than a threshold level. (see paragraphs 0032 – 0033, 0042 wherein if correlation is for that particular MS then process will continue else there is no point in taking further steps to receive this HS-SCCH and process is **aborted**).

It appears from comparing Prior Art figure 2 and figure 5 that AAPA does not use threshold to compare correlation value blocks (see the only difference between figures 2 and 5 is using threshold blocks 513, 525 and 531 in figure 5).

Strutt also teaches in the Code Division Multiple Access environment (col. 1 line 40 – col. 3 line 17) and offers an adaptive threshold selection for detection of a signal in the presence of noise (title, abstract) and reduces the number of false alarms by correlating the received signal and compares to threshold to determine whether the received signal includes a valid data signal or just noise (col. 3 lines 32-55) wherein the comparison circuit outputs a detection signal indicating detection of data signal in the received signal when the correlated value is at least equal to the threshold and outputs a non-detection signal indicating non-detection of the data signal when the level is less

than the threshold value. Strutt inventions adaptively detects noise and adjusts the threshold accordingly (col. 5 lines 4-67) and is well suited for CDMA systems wherein interference form other MS using different spreading codes can be characterized by its high correlation noise and can reduce overall complexity of the system by implementing the circuit (120 in figure 4) in a single application specific integrated circuit (col. 6 lines 22-56).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA (UE equipment) to include the ASIC circuit (i.e. 120 figure 4) as taught by Strutt so that the UE can determine if the signal is directed to it or the signal is just noise and not process the noise signal while reducing the overall size of the UE as taught by Strutt (col. 6 lines 29-33).

According to Applicants amended claim language and argument on page 17, paper dated 6/4/07, prior art does not teach dynamically adjusting the threshold level based on a communication traffic behavior.

Awad et al teaches using full set or reduced set of modulation schemes (see title, abstract, paragraph 0009 – 0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076) wherein 16-QAM, 64-QAM or QPSK modulation scheme is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to BS can employ higher levels of Modulation-and-coding scheme (paragraphs 0012 and 0018).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the invention as taught by AAPA in view of Strutt to consider channel conditions as taught by Awad in order to dynamically select modulation and coding schemes thereby providing the most efficient level of service to each mobile station.

According to Applicants, Awad does not teach correlating to a reduced set of possible codewords (see paper dated 11/15/07, page 12 lines 5-7).

May also teaches in the CDMA environment wherein received signal is compared to threshold to determine modulation rate to be applied (paragraphs 0005, 0009, 0025, 0036 - 0037) to allow for dynamic adjustments thus optimizing system performance. May et al even discloses a subset (i.e. reduced set) may be used (paragraphs 0038, 0040, claims 6 and 8 on page 5) which depends upon the degree of accuracy desired.

It would have been obvious for any one of ordinary skill in the art at the time of invention was made to modify the invention as taught by AAPA in view of Strutt and Awad to use subsets as taught by May in order to more accurately determine the modulation scheme to apply at the receiver as disclosed by May.

Regarding claim 43. Program claim 43 is rejected for the same reasons as apparatus claim 22 and method claim 1 since the recited apparatus and method would perform the claimed program steps.

Regarding claims 2 and 23. AAPA admit the code recited in claim 2 is located in the Background section (see paragraph 0079 wherein Applicants admit that code for

calculating **variance** (i.e. the recited limitation appearing in claim 2) can be found in the Background section).

Regarding claim 3. Claim 3 is directed towards a code for standard deviation. The Examiner notes the only difference between the code recited in claim 2 and the code recited in claim 3 is changing the word "variance" appearing in claim 2 to "standard deviation" recited in claim 3. However, the Examiner notes that variance means standard deviation and does not constitute novel subject matter.

Regarding claims 4 and 25. AAPA in view of Strutt do not explicitly show using ratio.

Awad et al teaches using full set or reduced set of modulation schemes (see title, abstract, paragraph 0009 – 0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076) wherein 16-QAM, 64-QAM or QPSK modulation scheme is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to BS can employ higher levels of Modulation-and-coding scheme (paragraphs 0012 and 0018).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the invention as taught by AAPA in view of Strutt to consider channel conditions as taught by Awad in order to dynamically select modulation and coding schemes thereby providing the most efficient level of service to each mobile station.

Regarding claim 6-8, 27-29 and 45-46. Strutt teaches determining if signal is directed to a particular UE (see figure 3 wherein UEs (i.e. 102,106 or 107) can determine if the signal is directed to it --- col. 5 lines 36-40).

Regarding claims 10-12 and 31-33. AAPA admit that any one of a plurality of possible threshold levels may be used (see paragraph 0011 wherein higher level is ensured (i.e. 16-QAM) and reverts to robust QPSK when UE has traffic directed towards it during less favorable channel conditions).

Regarding claims 13 and 34. Strutt teaches intermediate threshold (col. 6 line 47).

Regarding claims 14-16, 18, 35-37 and 39 . AAPA teaches standards are already in place for HS-SCCH Part I messages wherein full or reduced sets having different correlation values (see paragraphs 0010-0013, 101, 104 wherein certain UEs can handle one type of modulation schema and if fast-link standards are employed, then UE can adapt to fast rate 16-QAM or use lower rate QPSK when experiencing fading conditions).

Regarding claim 24. Claim 24 is directed towards a code for standard deviation. The Examiner notes the only difference between the code recited in claim 23 and the code recited in claim 24 is changing the word "variance" appearing in claim 23 to "standard deviation" recited in claim 24. However, the Examiner notes that variance means standard deviation and does not constitute novel subject matter.

Response to Arguments

3. Applicant's arguments with respect to claims 1-4, 6-25, 27-43 and 45-47 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claims 9, 17, 20-21, 30, 38 and 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached at (571) 272-7872. The central facsimile phone number for this group is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Centralized Delivery Policy: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number **(571-273-8300).**

Barry W. Taylor
Art Unit 2617

12/5/07

BARRY TAYLOR
PRIMARY EXAMINER

Approved
BWT
8/8/07

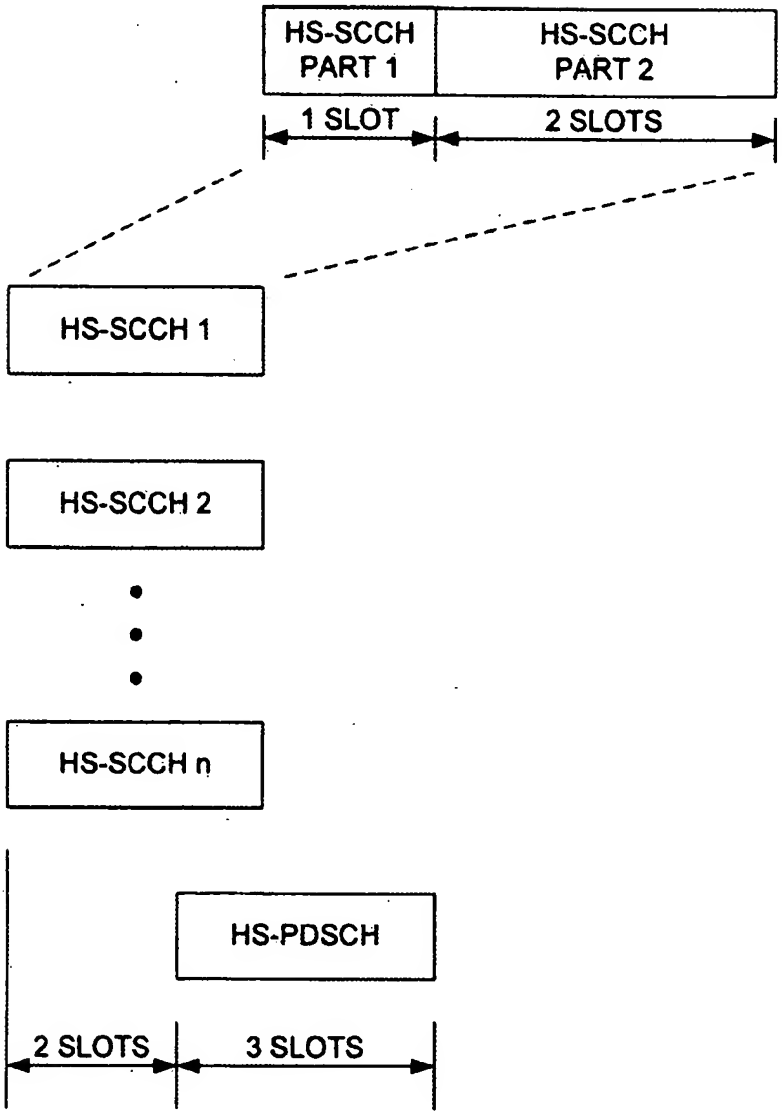

FIG. 1
(PRIOR ART)

Approved
BWT
8/8/07

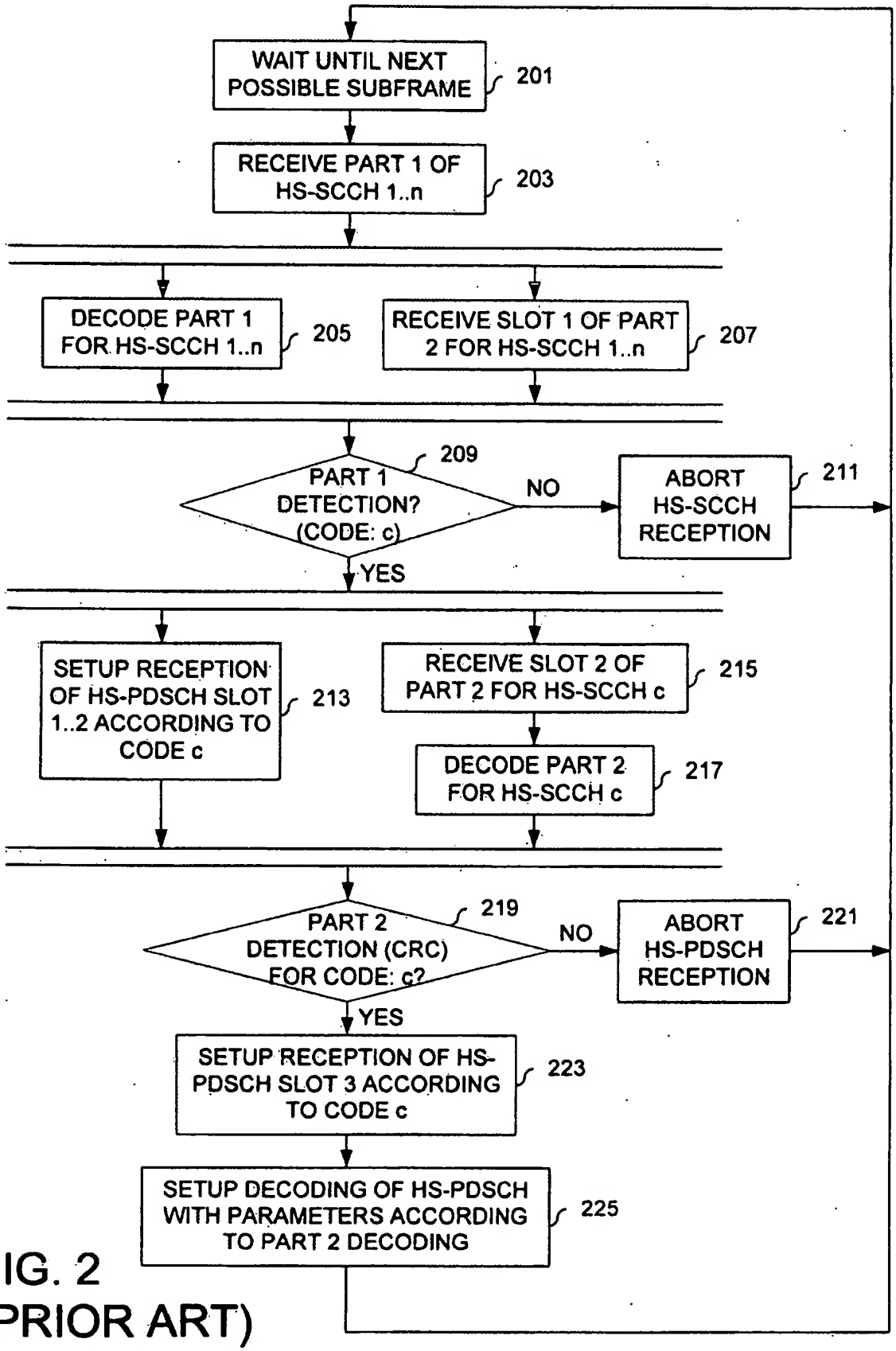

FIG. 2
(PRIOR ART)

Approved
KWT
8/8/07

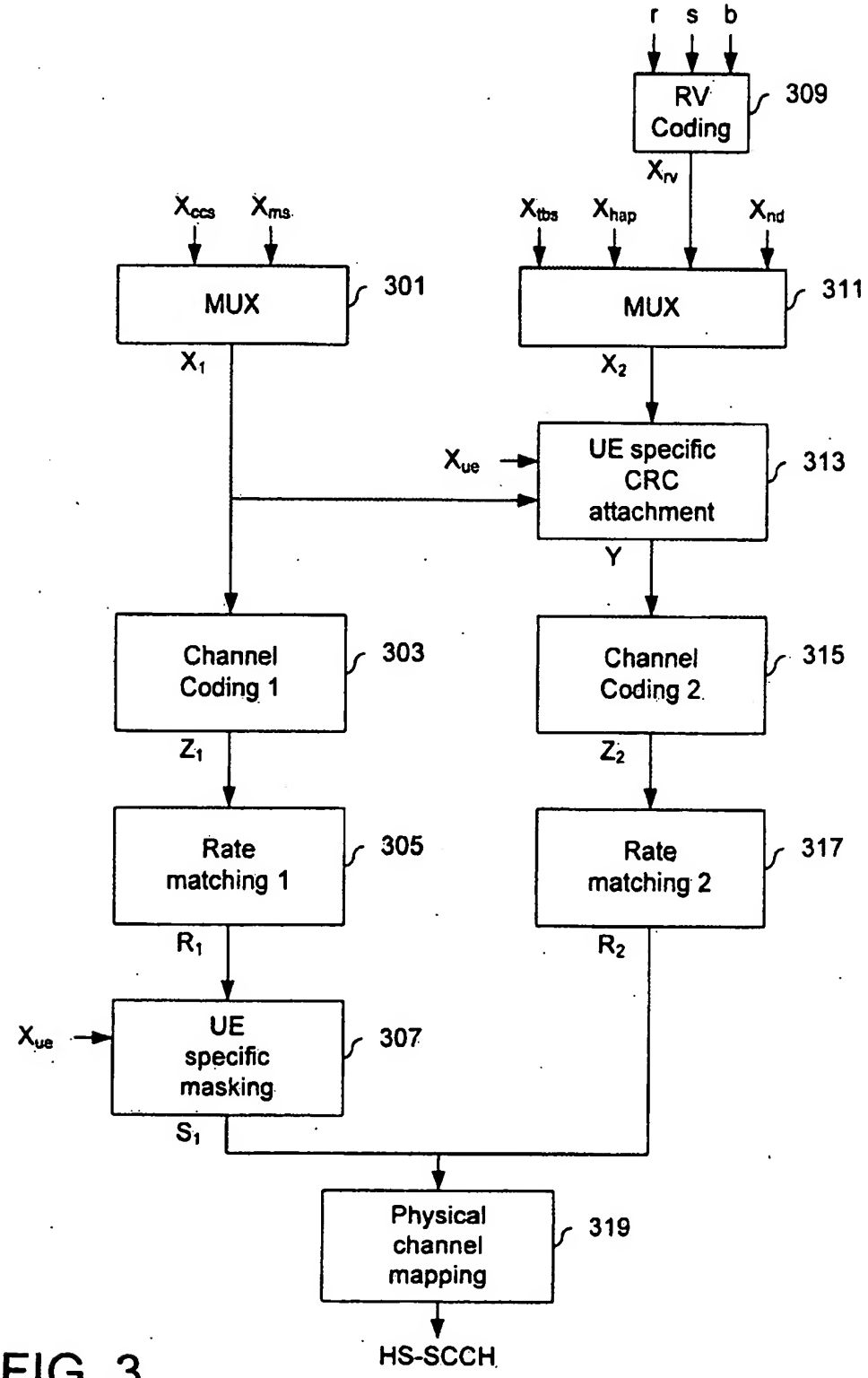

FIG. 3
(PRIOR ART)

Approved
BWT
8/18/07

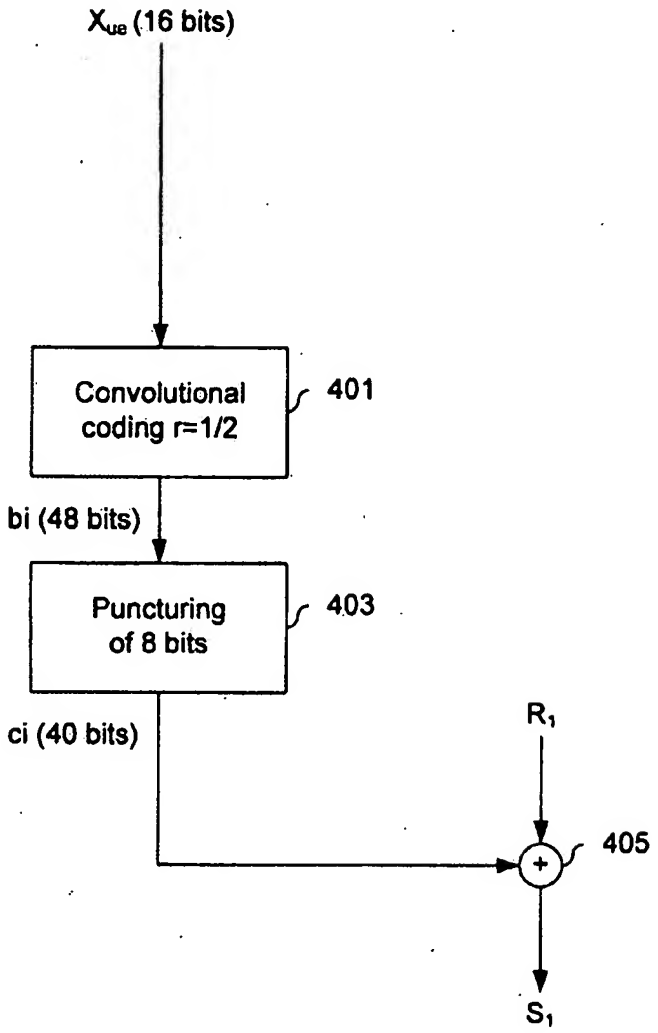

FIG. 4
(PRIOR ART)